Graduate Schools with the Lowest Rates of Student Loan Repayment

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Key Points

- Borrowers' progress in paying their federal student loans is considered a proxy for the quality and value of a higher education institution. Historically, however, efforts to report student loan repayment progress have not focused on graduate and professional degrees.
- A new data set allows us to examine the progress of graduate students from each higher education institution in paying down federal student loans between 2009 and 2014.
- Among graduate institutions, historically black colleges and universities have some of the lowest shares of borrowers who made progress repaying their federal student loans. Additionally, several large, private nonprofit and for-profit graduate institutions have low student loan repayment rates.
- Measuring loan repayment on a per-student basis sometimes produces different results than measuring repayment on a per-dollar basis. Some graduate institutions score well on one measure but poorly on the other, revealing the complexity in using loan repayment to assess quality and value.

Policymakers who are concerned about quality and value in higher education focus almost exclusively on undergraduate degrees or certificates. Graduate and professional degrees, in contrast, receive far less scrutiny. For example, when the Obama administration released its College Scorecard to provide consumers with information on student outcomes, such as earnings and student loan repayment, for each college and university, it left out graduate and professional degrees entirely.[1]

Yet graduate students account for a disproportionately large share of borrowing in the federal student loan program. And due to their higher balances, they are more likely to benefit from the government's Income-Based Repayment plan and qualify for loan forgiveness, imposing costs on taxpayers.[2] In fact, most institutions show slower loan repayment progress among former graduate students than undergraduates.[3]

A little-known and unique data set allows us for the first time to examine the progress graduate students from each institution make on paying down federal student loans. The Department of Education compiled the data, which formed the basis for a research paper by then-Treasury Department employees Tiffany Chou, Adam Looney, and Tara Watson. The data are currently hosted by Adam Looney at the Brookings Institution. The data set covers loans that entered repayment in 2009, aggregated at the student level, and tracks repayment progress through 2014.[4]

Options to Delay and Postpone Federal Student Loan Repayment

Graduate and professional students tend not to default on their federal student loans. They can, however, postpone paying off their debts through several programs while remaining in good standing. They can also use these programs successively, switching from one to the other to postpone payments.

Income-Based Repayment and Public Service Loan Forgiveness. Under Income-Based Repayment, all borrowers with federal student loans can cap their payments at 15 percent of discretionary income, which is defined as adjusted gross income on a federal tax return minus 150 percent of the federal poverty guideline, adjusted for household size. (More recent cohorts of borrowers pay only 10 percent of discretionary income.) Unpaid balances are forgiven after 25 years of payments (20 years for more recent cohorts). Borrowers working in nearly all government or nonprofit jobs have their balances forgiven after just 10 years of payments under the Public Service Loan Forgiveness Program. The borrowers in this analysis all had access to these plans, but not the more generous terms for recent cohorts of borrowers. The Department of Education estimates that graduate school borrowers account for 65 percent of enrollment in Income-Based Repayment.[6]

Forbearance. A borrower can claim multiple types of forbearances on a federal student loan. The most common forbearance effectively has no eligibility criteria. All that a borrower must do is request it. Under forbearance, a borrower's payments are fully suspended (or sometimes only reduced). Interest continues to accrue on the loans, however. The only limit is that a borrower cannot use forbearance for more than 36 consecutive months. Time in forbearance does not count against the time a borrower may use a deferment.

Deferment. Deferment works the same way as forbearance, but there are eligibility requirements, such as being unemployed or having a high debt-to-income ratio. Borrowers automatically qualify for a deferment while in school. A small share of federal student loans do not accrue interest while in deferment, but most do. Deferment benefits are limited to three years, except for in-school deferments, which are unlimited.

The data are at the institution level, which means that many different graduate programs are aggregated and reported as one data point, a limitation discussed more below. They also cover just one cohort of loans, as the Department of Education has not provided data for additional cohorts. Finally, the data cover only institutions with 100 or more graduate students entering repayment in 2009, so schools with small graduate programs are excluded.[5]

Despite these limitations, the data still provide a novel look at loan performance at graduate schools. They also give policymakers a glimpse into some of the potential benefits and drawbacks of using loan repayment rates to measure quality or risk.

One indicator in the data shows the share of graduate students at each university who entered repayment in 2009 and had not reduced the principal balance on their loans five years later. To illustrate, the denominator for this indicator is all the students at a graduate school who entered repayment on their federal student loans in 2009. In the numerator are borrowers with the same or larger balance in 2014 on those loans. For example, a borrower who entered repayment with a $10,000 balance and five years later owed $10,750 due to unpaid interest would be counted in the numerator.

In other words, the indicator measures whether accrued interest exactly matched or exceeded payments for each borrower, which can happen when borrowers default or when they use Income-Based Repayment, deferment, or forbearance. With Income-Based Repayment, borrowers' payments are set as a percentage of their income, so if their debt is high relative to their income, their payments may not be sufficient to pay down loan principal. (Payments are first credited to accrued interest before principal.) Deferments and forbearances allow borrowers to postpone payment altogether if they have a high debt-to-income ratio or are having trouble making payments. Interest generally still accrues in these plans (and during default), so borrowers who use them can end up with a higher balance years after entering repayment status.

A separate indicator in the data set shows, by graduate school, the share of the total dollars in federal student loans entering repayment in 2009 that were repaid five years later. Unlike the first indicator, it is not a per-student measure because it counts total dollars. This report focuses on the first indicator of repayment progress but includes the second for additional context.

Note that these indicators are not default rates; they are more comprehensive measures of repayment and non-repayment. In fact, in this data set, the share of loan dollars in default after five years of repayment is relatively low at 4 percent. Defaults would generally be captured in these indicators if the defaults cause borrowers' outstanding balances to increase. However, these indicators also capture borrowers who stay in good standing but make no progress repaying their loans or who even go deeper into debt due to accrued interest from using the Income-Based Repayment program, a hardship deferment, or a forbearance.

Both indicators reflect repayment rates for an institution's entire cohort of graduate and professional school borrowers. Therefore, different graduate programs within one institution that have different loan repayment rates are treated as one combined data point in this report, making those differences unobservable. There are several reasons why institution-level data, unlike program-level data, can paint an incomplete picture about loan repayment progress at graduate institutions, and these reasons are discussed more in the final section of this report. The overarching problem is that an institution could have one set of programs in which no students make progress repaying and another set of programs in which all students make progress, but, combined, the rates show that half of students make progress repaying.

Measuring Student Loan Repayment at Graduate Schools

The indicator in the data that measures the share of students who have made no progress repaying their balances can be used to identify the universities that pose the biggest risks to taxpayers and students—although, as explained later, that indicator can send mixed signals on such risk. This report refers to that indicator as the negative amortization rate.

There are several reasons why universities with high negative amortization rates pose risks to taxpayers and consumers even if those students do not default. The high rates of negative amortization stem from large shares of students using forbearances, hardship deferments, or Income-Based Repayment. This strongly implies that universities with high negative amortization rates are those where students' incomes are likely to be most out of line with their student debt. That is why they opt to reduce or suspend their payments. Thus, high negative amortization rates are an important signal to prospective students that debt-to-income ratios at a particular graduate school are high. (The data for this report do not include income information for former graduates, so we cannot know this for sure.)

The Department of Education estimates that Income-Based Repayment costs taxpayers roughly $20 for every $100 borrowed.

High negative amortization rates at universities also signal that taxpayers are exposed to elevated costs at such institutions. Students accruing unpaid interest on their loans five years into repayment could be more likely to have debt forgiven through Income-Based Repayment, which is costly to taxpayers. The Department of Education estimates that Income-Based Repayment costs taxpayers roughly $20 for every $100 borrowed.[7]

Given the risks associated with negative amortization, this report focuses on the institutions with the greatest shares of students who have failed to pay down principal on their loans five years into repayment.[8] It also helps illustrate the potential role that student loan repayment rates could play in signaling quality for consumers and protecting taxpayers.[9] A more comprehensive look at repayment rates by sectors of graduate schools can be found in the 2017 paper by Chou, Looney, and Watson.[10]

Table 1. 20 Graduate and Professional Schools with the Highest Share of Borrowers Who Had Not Reduced Principal Five Years After Entering Repayment

University	Type	Share of Borrowers Who Had Not Reduced Principal by 2014	Share of Total Debt That Was Paid Down by 2014	2009 Cohort Total Graduate School Debt (Millions)
Mississippi Valley State University	Public (HBCU)	65%	–7%	$5
Southern University at New Orleans	Public (HBCU)	62%	–6%	$5
Grambling State University	Public (HBCU)	59%	–7%	$5
Everest University (Corinthian)	Private For-Profit	58%	–2%	$2
University of Texas at Brownsville	Public	55%	19%	$11
Virginia State University	Public (HBCU)	53%	–3%	$3
Metropolitan College of New York	Private Nonprofit	53%	–5%	$10
Rosalind Franklin University of Medicine and Science	Private Nonprofit	51%	21%	$180
Prairie View Agricultural & Mechanical University	Public (HBCU)	51%	8%	$32
Delaware State University	Public (HBCU)	51%	3%	$3
Alabama Agricultural & Mechanical University	Public (HBCU)	50%	5%	$9
Alabama State University	Public (HBCU)	49%	6%	$10
Strayer University	Private For-Profit	49%	3%	$110
Southern University and Agricultural & Mechanical College at Baton Rouge	Public (HBCU)	48%	5%	$21
Monroe College	Private For-Profit	47%	3%	$2
Clark Atlanta University	Private Nonprofit (HBCU)	47%	3%	$12
Jackson State University	Public (HBCU)	46%	15%	$22
Indiana University–Northwest	Public	44%	6%	$4
Amridge University	Private Nonprofit	44%	6%	$6
Lincoln University of Pennsylvania	Public (HBCU)	44%	6%	$10
Median for All Graduate and Professional Schools		**20%**	**24%**	**$10**

Source: Author's calculations using Adam Looney, "The Student Loan Crisis: A Look at the Data," Brookings Institution, August 16, 2017, https://www.brookings.edu/research/the-student-loan-crisis-a-look-at-the-data/.

Table 1 ranks the 20 universities with the highest negative amortization rates among graduate and professional students. At the median for all institutions in the data set, 20 percent of a university's graduate students who entered repayment in 2009 had not reduced their principal balance by 2014, meaning most students reduced their balances. However, all universities in Table 1 had a negative amortization rate of 44 percent or higher. At the institution with the worst ranking, 65 percent of former students who borrowed failed to reduce principal by 2014. This report refers to Table 1 as the "high negative amortization list."

For context, Table 1 also shows the share of all dollars that entered repayment for the 2009 cohort that were repaid by 2014. Negative numbers reflect that the total debt for the cohort increased due to unpaid accrued interest. For example, if $1 million

Table 2. 20 Graduate and Professional Schools with Above-Average Shares of Borrowers Who Had Not Reduced Principal Five Years After Entering Repayment, Ranked by Total Graduate Student Debt

University	Type	Share of Borrowers Who Had Not Reduced Principal by 2014	Share of Total Debt That Was Paid Down by 2014	2009 Cohort Total Graduate School Debt (Millions)
New York University	Private Nonprofit	34%	36%	$1,135
University of Phoenix	Private For-Profit	36%	12%	$883
Nova Southeastern University–Davie	Private Nonprofit	33%	15%	$412
Walden University	Private For-Profit	33%	13%	$274
Capella University	Private For-Profit	34%	20%	$208
Argosy University	Private For-Profit	37%	13%	$200
Rosalind Franklin University of Medicine and Science	Private Nonprofit	51%	21%	$180
Keller Graduate School of Management (DeVry)	Private For-Profit	34%	19%	$180
Midwestern University	Private Nonprofit	22%	28%	$124
Webster University	Private Nonprofit	34%	20%	$116
Grand Canyon University	Private For-Profit	28%	19%	$115
National University–La Jolla	Private Nonprofit	26%	19%	$110
Strayer University	Private For-Profit	49%	3%	$110
Thomas M. Cooley Law School	Private Nonprofit	29%	17%	$104
Touro College–Main Campus Midtown	Private Nonprofit	22%	24%	$93
Indiana University–Purdue University Indianapolis	Public	23%	17%	$89
Long Island University	Private Nonprofit	22%	13%	$85
Wayne State University	Public	28%	18%	$85
Arizona State University	Public	20%	13%	$84
University of Miami	Private Nonprofit	23%	25%	$84
Median for All Graduate and Professional Schools		**20%**	**24%**	**$10**

Source: Author's calculations using Adam Looney, "The Student Loan Crisis: A Look at the Data," Brookings Institution, August 16, 2017, https://www.brookings.edu/research/the-student-loan-crisis-a-look-at-the-data/.

entered repayment in 2009 but $1.1 million in debt remained outstanding in 2014, the cohort shows a negative repayment rate of 10 percent. If the same $1 million entering repayment in 2009 instead shows a balance of $0.9 million outstanding in 2014, that equates to a positive repayment rate of 10 percent. This report discusses later how some institutions with high negative amortization rates also show that the cohort repaid an above-average amount of the total debt by 2014.

Table 2 also ranks institutions with high negative amortization rates, but it has been adjusted to focus on large institutions. In this case, a high negative amortization rate is defined as any rate higher than the median (20 percent) for all graduate institutions in the data. Only institutions with more than $83 million in graduate borrowing are included to produce a list of 20 institutions, ranked by the amount of debt. This alternative ranking filters out institutions with weak loan performance but relatively few students. This report refers to Table 2 as the "large institution list."

Graduate Schools with the Smallest Share of Students Paying Down Their Loans

The tables reveal several important findings. Table 1, the high negative amortization list, is dominated by historically black colleges and universities (HBCUs). Over half the slots are occupied by these institutions. While some observers have raised concerns about high student debt and poor outcomes among graduate students at for-profit universities, these data suggest that HBCUs warrant similar scrutiny. In fact, as a group, HBCUs show weaker loan repayment rates than the for-profit sector and similar per-student debt burdens.[11]

The high negative amortization list does not, however, factor in the institutions' size in terms of enrollment, number of borrowers, or total debt. Individually (and collectively) HBCUs account for a small share of graduate lending.

> Nearly half the Strayer University graduate students who entered repayment in 2009 had made no progress paying down their debts by 2014.

On the large institutions list, there are many for-profit institutions. Graduate students collectively owed at least $200 million at several of these institutions, including the University of Phoenix, Walden University, Capella University, and Argosy University, making them some of the largest graduate schools in terms of loan volume. Their students were also more likely to owe more on their debts five years into repayment than students at the median institution, which is why they make the cut for the large institution list. For example, at the median institution, 20 percent of borrowers failed to pay down principal five years into repayment. But at the University of Phoenix, 36 percent of students failed to pay down principal. And students from that cohort entered repayment with $883 million in debt, nearly 10 times the median for graduate institutions.

Another for-profit institution stands out because it appears on both the large institution list and the high negative amortization list. Students attending Strayer University entered repayment on $110 million in loans, making it one of the largest graduate schools in the country. It also has one of the highest shares of students who owe more on their loans five years later—49 percent. In other words, nearly half the Strayer University graduate students who entered repayment in 2009 had made no progress paying down their debts by 2014.

Public and Private Nonprofit Universities

Loan repayment problems at for-profit universities have been well-documented, at least for undergraduates, making these findings somewhat expected. Yet several large public and private nonprofit universities (excluding HBCUs) appear on the lists of institutions with the weakest graduate student loan performance.

One institution, the Rosalind Franklin University of Medicine and Science, appears on both lists: It has one of largest shares of students who owe more on their debts five years into repayment, and its students borrow a large amount in federal loans. Rosalind Franklin University is a private nonprofit institution in North Chicago, Illinois, that offers a range of advanced degrees in the medical professions. The institution has been scrutinized by accrediting agencies.[12]

The University of Texas at Brownsville is one of two public institutions that appears on the high negative amortization list. Over half its graduate students failed to pay down principal on their federal student loans five years after entering repayment, which is the fifth-highest share of any institution. The institution has since merged with another public institution to form the University of Texas Rio Grande Valley.

The Metropolitan College of New York is another nonprofit institution that makes the high negative amortization list. Fifty-three percent of former students made no progress paying down their principal balances.

Turning to the large institutions list, private nonprofit institutions make up half the slots, which is partly due to their large graduate programs and high loan volumes but also because a high share of borrowers make no progress on repaying their debts.

New York University (NYU) tops the list because it had over $1 billion in graduate student debt entering repayment in 2009. Just over one-third of its graduate students failed to pay down principal on their loans five years into repayment. That is in the same league with many large for-profit graduate schools, such as the University of Phoenix, Capella University, and DeVry. In fact, two large for-profit intuitions on the list, Walden University and Grand Canyon University, boast a higher share of students paying down their principal balance than at NYU. That said, by 2014, NYU's graduate students had paid down a high share (36 percent) of their loan dollars from 2009. That seemingly contradictory pattern is evident for several other institutions and is discussed more in the next section.

Two additional private nonprofit institutions on the large institutions list bear mentioning. Nova Southeastern University in Florida is third on the list with over $400 million in federal student loans among its graduate students entering repayment in 2009. One in three graduate students showed no progress paying down their loans after five years of repayment, about the same rate as NYU. Even though the institution has a similar share of borrowers making no progress, however, Nova Southeastern University's graduate students did not pay back nearly as much of their debt as did their peers at NYU. Only 15 percent of the debt had been paid down by 2014, a figure on par with most of the for-profit institutions on the list and well below the rate for the median institution (24 percent). Borrowers from Capella University, the Keller Graduate School of Management (DeVry), and Grand Canyon University paid down more of their debts than did students at Nova Southeastern University.

Different Indicators Show Different Outcomes

This report has noted several institutions with a high negative amortization rate and a high rate of aggregate loan repayment (or vice versa). Some institutions with a large share of students going deeper into debt after five years also show that their students pay down a large share of their outstanding debt over the same period.

At first glance these two trends may seem contradictory. An institution with a higher negative amortization rate should not also see its students' total debt diminish quickly. However, the two trends can occur simultaneously if the borrowers who are repaying their debts are doing so rapidly and substantially or if they have the largest debts, or both. In other words, the students who make progress repaying more than make up for the students who do not when measuring total dollars.

These two groups of students may have enrolled in vastly different programs, which explains their divergent loan repayment progress. Because the data are at the institution level, it is not possible to make such an assessment. To do so would require program-level repayment data, but this report helps illustrate why program-level data are important for making a more meaningful assessment of loan repayment progress.

Consider NYU. Just over a third of graduate students did not reduce the principal balance on their loans, probably because their incomes were low relative to their debts and they used Income-Based Repayment or forbearances to postpone payments. On a per-student level, that is troubling. Yet the cohort as a whole managed to retire 36 percent of the combined loan balances over the same period. This means that the students paying down their debts are making large payments early in their repayment terms and are likely to pay off their loans in approximately 10 or 12 years. These students may also have the largest debts. This pattern might also reflect that some small programs at NYU produce graduates with large debts who nevertheless earn high incomes and repay their loans quickly (i.e., medicine, law, M.B.A.s), while other programs that enroll large numbers of students with smaller debts have high rates of negative amortization.

Another trend that may explain rapid repayment rates is loan refinancing. Private lenders have been active in recent years in offering loans to the most credit-worthy borrowers to pay off their federal loans. These private loans carry lower interest rates. When a borrower refinances with a private lender, his federal loan balance is immediately reduced to $0. That can skew dollar-based measures of repayment to show much higher repayment rates than what has actually occurred. The student-based negative amortization rate is not, however, affected by high rates of refinancing, in theory.

While no institution on either list shows as much dichotomy on the two repayment measures as NYU, several others fair markedly better on the dollar-based measure than the borrower-based negative amortization rate. Even though Rosalind Franklin University has one of the highest negative amortization rates among former students, the share of dollars that the 2009 repayment cohort paid down (21 percent) is near the median for all graduate institutions (24 percent). That is somewhat true for the University of Texas at Brownsville and Jackson State University, as well.

One university on the large institutions list shows this pattern but in reverse. Slightly more than 20 percent of Arizona State University's graduate students did not make progress paying down their debts, which is the same percentage of students as at the median institution. (Arizona State University makes the cut for the large institutions list because of its size measured in total debt.) However, the students paid down only 13 percent of the total debt that entered repayment, far below the percentage at the median institution and roughly the same as the percentage at many large for-profit institutions.

> The share of students who do not pay down any principal after five years signals what the typical student can expect to experience when repaying his or her loans.

It may be that while most graduate students from Arizona State University make progress repaying, they do so slowly. That is the opposite of NYU. But like at NYU, there may also be divergent repayment patterns among different programs at Arizona State University that are obscured by the institution-level data.

These two different indicators of repayment—the per-student, negative amortization measure and the dollar-based measure—pose a challenge for assessing quality and value at different graduate schools. Which one provides the best signal that an institution's graduate students have paid more for their educations than what their incomes can reasonably support or that students experience relatively weak labor market outcomes? There is not an easy answer because each indicator has strengths and weaknesses.

The share of students who do not pay down any principal after five years signals what the typical student can expect to experience when repaying his or her loans. If half an institution's students owe more on their debts five years into repayment and this pattern persists for many cohorts of students, that is a strong signal that a future student is more likely to have the same experience than not. Of course, the current federal loan program provides students with Income-Based Repayment and loan forgiveness, so such an outcome may not actually mean individual students will suffer financial consequences from their high debt-to-income ratio. Nevertheless, the indicator sends signals about value and quality for the typical student.

The negative amortization indicator may not, however, be as useful as total dollars repaid for gauging taxpayer risk associated with loans and graduate institutions. In fact, it can send the wrong signal. NYU provides a useful case again. The institution's borrowers have rapidly paid down about one-third of the total debt they borrowed after five years of repayment. If they kept up that pace, the entire cohort could be fully repaid in just over a decade, as principal reduction accelerates in a fixed amortization schedule. The loans would therefore pose little risk for taxpayers. Yet focusing on the high share of borrowers who make no progress repaying their debts in the first five years could suggest just the opposite—that a lot of the balance will be left unpaid and forgiven under the Income-Based Repayment program. Therefore, the dollar-based measure seems better suited to assessing taxpayer risk.

On the other hand, the dollar-based measure can obscure weak loan repayment in an institution's smaller programs if students from its better-performing, larger programs rapidly pay down their loans. In other words, good programs more than make up for the bad programs. Across many institutions, such a pattern would hide a large number of poorly performing graduate programs, even though at each institution those programs make up a relatively small share of borrowers. If the goal of the repayment measure is to protect taxpayers and consumers, then this dynamic would limit the effectiveness of the dollar-based measure.

Conclusion

This report is one of the first to examine federal student loan repayments for graduate institutions. While the data are not without limitations and this report is based only on two lists of 20 institutions each, the data reveal some important findings. HBCUs have some of the weakest rates of loan repayment. They dominate the list of 20 institutions with highest negative amortization rates, and their repayment rates overall are lower than those in the for-profit sector. For-profit institutions number among the schools with moderately weak repayment rates and large aggregate outstanding balances. Many private nonprofit institutions also appear in the two rankings. These findings suggest that institution type does not guarantee that graduate students pay down their student loans in a timely manner, which is itself a proxy for quality and value.

The differences illustrated in this report between the student-based negative amortization rate and the dollar-based measures of loan repayment show that using repayment progress as a quality-assurance metric is not straightforward. Per-student measures of repayment can differ markedly from those that gauge the total dollars repaid over a period of time in a cohort. Policymakers should assess which one is better for the particular goal they are trying to achieve.

About the Author

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Notes

1. US Department of Education, College Scorecard, https://collegescorecard.ed.gov/.
2. US Department of Education, "Comparison of Total Originations to the Net Present Value of Payments in Each IDR Repayment Plan: All Borrowers Expected to Enter IDR Repayment in 2016," https://www2.ed.gov/about/overview/budget/budget17/idrtables.pdf.
3. Tiffany Chou, Adam Looney, and Tara Watson, "Measuring Loan Outcomes at Postsecondary Institutions: Cohort Repayment Rates as an Indicator of Student Success and Institutional Accountability" (working paper, National Bureau of Economic Research, Cambridge, MA, February 2017), http://www.nber.org/papers/w23118.
4. Chou, Looney, and Watson, "Measuring Loan Outcomes at Postsecondary Institutions."
5. Data for a small number of stand-alone graduate and professional schools are included in a separate data file. A few dozen institutions from this overall file that are clearly graduate and professional institutions were appended to the graduate file for this report. Specifically, the main file for the analysis is "Loan Entry Exit 03 Graduate," and the supplemental file that includes additional stand-alone graduate and professional schools is "Loan Entry Exit 01 Overall." Adam Looney, "The Student Loan Crisis: A Look at the Data," Brookings Institution, August 16, 2017, https://www.brookings.edu/research/the-student-loan-crisis-a-look-at-the-data/.
6. US Department of Education, "Comparison of Total Originations to the Net Present Value of Payments in Each IDR Repayment Plan."
7. Office of Management and Budget, "Department of Education" in *Fiscal Year 2019: An American Budget*, February 2018, https://www.whitehouse.gov/wp-content/uploads/2018/02/edu-fy2019.pdf.
8. Foreign universities that receive federal student aid and institutions in Puerto Rico have been excluded from the data for this report. The data are not broken out by degree program and reflect the entire graduate and professional student cohort at each institution.
9. Some observers might question how much meaning these figures have for graduate school and student loan borrowing today because they reflect loan repayment immediately after a severe economic recession. More recent cohorts, one might assume, would show more progress on repayment given the improvement in economic conditions. However, repayment progress may not look better for more recent cohorts of graduate students. Borrowers repaying during the period covered here had access to a less generous Income-Based Repayment program than borrowers today, one that required that they make higher payments than today's borrowers. The cohort shown here was required to pay 15 percent of their discretionary incomes if using Income-Based Repayment. Due to changes the Obama administration made to the program, as of 2013, borrowers pay only 10 percent of their discretionary incomes. That is a 33 percent reduction in monthly payments compared with the students in the cohort covered by this report. Today's graduate students may therefore show similar progress repaying their debts as the 2009 cohort, despite the stronger economy.
10. Chou, Looney, and Watson, "Measuring Loan Outcomes at Postsecondary Institutions."

11. At the median for HBCUs, 37 percent of students failed to pay down principal on their loans five years after they began repayment, while at for-profit institutions, the figure is 30 percent. And students at HBCUs at the median had paid down just 5 percent of their debts after five years, whereas students at for-profit institutions paid down 16 percent.

12. Robert Becker, "Medical School Put on Probation: Administration, Ties to Hospitals, Student Debt Cited," *Chicago Tribune,* June 16, 2004, http://articles.chicagotribune.com/2004-06-16/news/0406160161_1_liaison-committee-medical-education-student-debt.